

Claims

1. An undersea optical repeater, comprising:
 - a pressure vessel for use in an undersea environment, said pressure vessel having at least two cable receiving elements for respectively receiving ends of optical cables that each include an electrical conductor therein;
 - at least one optical amplifier located in the pressure vessel, said optical amplifier including at least one electrical component adapted to receive electrical power from the electrical conductors in the optical cables; and
 - a dielectric envelope surrounding the pressure vessel to provide a hermetic seal therewith, said envelope including a dielectric overmold surrounding at least a portion of the pressure vessel.
2. The undersea optical repeater of claim 1 wherein said dielectric overmold surrounds the entire pressure vessel.
3. The undersea optical repeater of claim 1 wherein pressure vessel includes a cylindrical portion and end caps coupled to opposing ends of the cylindrical portion.
4. The undersea optical repeater of claim 3 wherein said dielectric overmold surrounds at least the end caps of the pressure vessel.
5. The undersea optical repeater of claim 3 wherein said dielectric envelope includes a preformed dielectric sheath press-fitted around the cylindrical portion of the pressure vessel.
6. The undersea optical repeater of claim 4 wherein said dielectric envelope includes a preformed dielectric sheath press-fitted around the cylindrical portion of the pressure vessel.

7. The undersea optical repeater of claim 1 wherein said dielectric overmold is a thermoplastic material.
8. The undersea optical repeater of claim 6 wherein said dielectric overmold is a thermoplastic material.
9. The undersea optical repeater of claim 7 wherein said thermoplastic material is polyethylene.
10. The undersea optical repeater of claim 8 wherein said thermoplastic material is polyethylene.
11. The undersea optical repeater of claim 9 wherein said preformed dielectric sheath is a polyethylene sheath.
12. The undersea optical repeater of claim 1 wherein said pressure vessel is a pressure vessel adapted for an undersea optical fiber cable joint.
13. The undersea optical repeater of claim 1 wherein said pressure vessel is a pressure vessel adapted for a universal cable joint for jointing optical cables having different configurations.
14. The undersea optical repeater of claim 1 wherein at least a portion of the pressure vessel is adapted to be in electrical contact with the electrical conductors in the optical cables.
15. The undersea optical cable of claim 3 wherein said end caps are each adapted to be in electrical contact with one of the electrical conductors in the optical cables.